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(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:

BERNASCONI, Jean
Cabinet LAVOIX
2, Place d'Estienne d'Orves
F-75441 PARIS
France

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Cabinet LAVOIX

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Applicant USINOR et al	

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
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<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
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The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 338.70.60

Authorized officer

P. Pouvreau

Telephone No. (41-22) 338 9546

AMENDED CLAIMS

[received by the International Bureau on 25 October 2004 (25.10.2004);
original claims 1 and 21 amended; remaining claims unchanged (3 pages)]

1. A metal laminate comprising between two outer metal sheets an
adhesive polymer layer, characterised in that the adhesive polymer
layer comprises cross-linked polyethylene or a copolymer thereof, co-
grafted with a silane compound and with an unsaturated carboxylic
acid and/or a derivative thereof.
2. Metal laminate according to claim 1, wherein the surface of the first
outer metal sheet is greater than the surface of the second outer metal
sheet.
3. Metal laminate according to claim 1 or 2, wherein the outer metal
sheets are made of steel or aluminium.
4. Metal laminate according to any of claim 1 to 3, wherein the adhesive
polymer layer comprises more than 50 % in weight of cross-linked
grafted polyethylene.
5. Metal laminate according to claim 4, wherein the adhesive polymer
layer comprises 80 to 95 % in weight of cross-linked grafted
polyethylene.
6. Metal laminate according to any of claims 1 to 5, wherein the cross-
linked polyethylene is grafted with an unsaturated carboxylic acid
containing 1 to 6 carboxylic groups and/or a derivative thereof.
7. Metal laminate according to claim 6, wherein the cross-linked
polyethylene is grafted with maleic acid and/or a derivative thereof.

8. Metal laminate according to claim 7, wherein the cross-linked polyethylene is grafted with maleic acid anhydride.

5 9. Metal laminate according to any of claims 1 to 8, wherein the adhesive polymer layer comprises 0 to 80 % in weight of high-density polyethylene.

10 10. Metal laminate according to claim 9, wherein the adhesive polymer layer comprises 50 to 80 % in weight of high-density polyethylene.

11. Metal laminate according to any of claims 1 to 10, wherein the adhesive polymer layer comprises 20 to 95 % in weight of elastomer.

15 12. Metal laminate according to claim 11, wherein the adhesive polymer layer comprises 20 to 45 % in weight of elastomer.

20 13. Metal laminate according to any of claims 1 to 12, wherein the adhesive polymer layer also comprises 0.5 to 10 % in weight of a copolymer of styrene and an unsaturated carboxylic acid and/or a derivative thereof.

14. Metal laminate according to claim 13, wherein the adhesive polymer layer comprises a styrene- maleic acid anhydride copolymer.

25 15. Metal laminate according to any of claims 1 to 14, wherein the adhesive polymer layer further comprises 0.1 to 5 % in weight of an epoxy resin.

16. Metal laminate according to any of claims 1 to 15, wherein the organosilane compound is chosen from vinylalcoxysilanes, dialcoxysilanes, trialcoxysilanes or tetraalcoxysilanes

5 17. Metal laminate according to any of claims 1 to 16, wherein the adhesive polymer layer further comprises a flame retardant agent.

18. Metal laminate according to any of claims 1 to 17, wherein the adhesive polymer has a gel content of at least 15 % in weight.

10 19. Metal laminate according to claim 18, wherein the adhesive polymer has a gel content of at least 30 % in weight.

15 20. Metal laminate according to any of claims 1 to 19, wherein the polymer layer comprises an intermediate layer of cross-linked non-grafted polyethylene.

21. Process for the manufacture of a metal laminate according to any of claims 1 to 20 comprising the steps consisting in :

- 20
- a. Providing a first and a second metal sheet;
 - b. Applying a polymer composition comprising cross-linked polyethylene or a copolymer thereof, co-grafted with a silane compound and with an unsaturated carboxylic acid and/or a derivative thereof onto the first metal sheet;
 - 25 c. Applying the second metal sheet onto the polymer layer applied onto the first metal sheet to obtain a metal laminate; and
 - d. Heating the metal laminate to complete the adhesion.